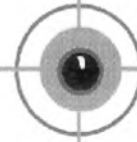


Clinical Anatomy of the Eye

SECOND EDITION

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The Eyeball

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Fascial Sheath of the Eyeball (Fascia Bulbi, Tenon's Capsule)

The fascial sheath is a thin membrane that envelops the eyeball and separates it from the orbital fat (Fig. 6-1). It thus forms a socket for the eyeball. The inner surface of the sheath is smooth and shiny and is separated from the outer surface of the sclera by a potential space called the *episcleral space*. Crossing the space and attaching the fascial sheath to the sclera are numerous delicate bands of connective tissue. Attached to the outer surface of the fascial sheath are coarse trabeculae that run through the orbital fat.

Anteriorly, the fascial sheath is firmly attached to the sclera about 1.5 mm posterior to the corneoscleral junction. Posteriorly, the sheath fuses with the meninges around the optic nerve and with the sclera around the exit of the optic nerve. Close to the optic nerve the fascial sheath of the eyeball is pierced by the ciliary nerves and vessels (Fig. 6-2) and by the vortex (vorticose) veins.

The tendons of all six extrinsic muscles of the eye pierce the fascial sheath as they pass to their insertion on the eyeball (Figs. 6-1 and 6-2). At the site of perforation the fascial sheath is reflected along the tendons of these muscles to form on each a tubular sleeve. The superior oblique muscle sleeve extends as far as the trochlea; the inferior oblique muscle sleeve extends to the origin of the muscle on the floor of the orbit.

The tubular sleeves for the four recti muscles have important expansions. Those for the medial and lateral recti are strong and are attached to the lacrimal and zygomatic bones (Fig. 6-1). Because these expansions may limit the actions of these muscles on the eyeball, they are called the *medial and lateral check ligaments* (Fig. 6-2).

Thinner and less distinct expansions extend from the superior rectus tendon to that of the levator palpebrae superioris (Fig. 6-2), and from the inferior rectus to the inferior tarsal plate. Their exact functions are not known, although the superior expansion may ensure that the two muscles work in tandem when the individual looks upward. Similarly, the inferior expansion assists in pulling down the lower eyelid and maintaining an appropriate alignment of the lid with the globe when the person looks downward.

The inferior part of the fascial sheath of the eyeball is thickened and is continuous medially and laterally with the medial and lateral check ligaments (Fig. 6-2). This hammock-like arrangement of the fascial sheath constitutes what is known as the *suspensory ligament (of Lockwood)*. This thickened area receives contributions from the fascia of the inferior rectus and the inferior oblique muscles as they cross each other below the eyeball (see pages 249 and 252).

Function

The main function of the fascial sheath of the eyeball is to position and support the eyeball within the orbital cavity and permit the actions of the extrinsic muscles to produce movement of the eyeball. Very little movement takes place between the eyeball and the sheath. Thus, the eyeball and sheath move together on a bed of orbital fat.

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